Census data NS22 Tübatulabal NS22

511 for 1932 showed there was marked tendency among
younger women to leave area and seek education,
177 permanent employment in Los Angeles, Bakersfield;
167 young men, on other hand, tended to remain within area; this was probably because opportunities for employment at home more favorable for men than for women. Altogether, although present economic status of Tübatulabal is low, especially in wintertime, yet they are not on the whole an indigent group, but continue to be economically independent, as before white contact.

BASIC SUBSISTENCE

[241] Tübatulabal hunting-gathering group; all
511 forms agriculture lacking. Plant foods and game
222 formerly plentiful in valley-foothill regions
224 (all informants); foods most frequently mentioned
226 by informants are acorns and piñons, deer, rabbits, fish. No famine tales; among Tübatulabal plant-food resources better than in many parts of Calif. because this group had double access within w. and e. limits of area to acorns, central Calif. staple, and piñon nuts, Great Basin staple food. As piñons biennial crop, presence of acorns in area greatly augmented food resources. Furthermore, maturing of piñons and acorns is not simultaneous but successive, acorns following piñons, so that Tübatulabal could, and did, take advantage of both crops in early and late fall.

221 Yearly food cycle.- February to May. Mescal,
222 yucca whipplei stalks, tender immature pods of
224 tree yuccas, various bulbs obtained in lower
226 foothills and floors of valleys by individuals. Cached piñons, acorns being used. Large, small game hunted; geese obtainable in March. Fishing done by groups during April, from confluence of Kern and South Fork of Kern downstream (fig. 1). Family groups might also go W to Tulare lake to "eat ducks and fish" at this time.

May. Small seeds plentiful on floor, lower foothills of valleys; green pine nuts from Digger pine, juniper berries gathered in foothills;
[512] green plants gathered; "people went out in large groups, leaving houses early in morning, returning in evening" (MM). Cached acorns, piñons still being used. Large, small game hunted, especially rabbits, in valleys and foothills; occasional camp-hunting, bulb-gathering expeditions E across Sierras to Indian Wells valley and Mohave desert. Some fishing during early May in augmented Kern.

June. Some small seeds still available, depending on relative lateness of season; raw tule roots growing around springs eaten; wild tobacco growing in valleys pruned. Stores of cached acorns, piñons nearing depletion. Rabbit drives with nets in valleys; birds, large game hunted; little fishing as rivers in full flood from melting snows.

● [251] July to middle of August. Season par excellence for drying commodities; roots of rush

226
417

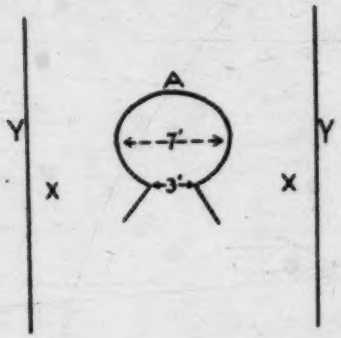

Fig. 2. Fish corral. A, wall of corral, X, men with poles, Y, banks of stream.

Another method of obtaining fish in large
226 quantities was to stupefy them; roots, stalks, leaves of plant (pa·lu·l) which "looks like cane, grows in moist soil, has leaves that get reddish-yellow in fall" and which SM identified from drawing as sp. of Smilacina, mashed slightly, [171] thrown into quiet pools. Buckeye, turkey mullein, soaproot, all available to Tübatulabal and used by other tribes as fish poison, not used (SM, FP). In poisoning fish, no dam built; as fish floated to surface they were scooped up in conical twined tule baskets.

226 411 In winter fish sluggish, "hardly move"; mainly harpooned or speared from rafts in Kern r. and South Fork valley lakes by individuals. Fish spear long pole with 2 wooden points sharpened by rubbing on rock.

252 Fresh fish cleaned, roasted whole; 4 large fish often tied together, wrapped in branches of odorless willows (poyiwošt; p. 11) and cooked in ashes at fishing place; carried home in willow wrapping. Mussels cooked by roasting in shells in hot ashes.
● [251] Fish one of foods Tübatulabal stored for winter use.

824 137 Ethnobotany.- Botanical collections made chiefly in South Fork, Kern valleys, and surrounding foothill regions in May-July; collections checked with SM, ES chiefly. Some 220 species collected, 130 of which informants said were put to economic or medicinal uses; 56 of these ethnobotanical species belong to foothill floral area, 40 to desert floral area, 10 to Great Basin floral area; remainder general in distribution.

In identifying specimens, informants tasted, smelled plants if dubious about identification.

Of plant foods, those starred mentioned most frequently by informants; possibly these plants used most commonly for food in aboriginal times.

Nuts, large seeds (generic term, punṣil) included: *Acorns (generic term, wa'ant). Six varieties used: (1) acorns (maŋi·l) from blue oak (maŋi·'u·l), Quercus douglasii H. & A., foothill floral area; these grow on n. slopes of Paiute mts. at s. borders Tübatulabal area; nuts mature annually, large, "don't taste bitter after leach-

824 (Gray) Greene; Lycum cooperi Gray; Marrubium
137 vulgare L.; Malacothrix californica DC.; Melilotus indica All.; Mimulus gluttatus D.C., M. cardinalis Dougl.; Mirabilis laevis (Benth.) Curran; Montia perfoliata (Donn) Howell; Nama demissum Gray; Oenothera alyssoides and O. alyssoides T. & G. var. decorticans Jepson, O. bistorta Nutt., O. caespitosa Nutt., O. contorta Dougl., O. pallida Lindl., O. palmeri Watson, O. scapoidea T. & G.; Pallaea and romedaefolia Fee; Penstemon laetus Gray, P. palmeri Gray, P. breviflorus Lindl.; Phacelia tanecilifolia Benth., P. hispica Gray var. cicutaria McB.; Platystemon californicum Benth.; Polygonum persicaria L.; Ranunculus aquatilis L.R. var. cymbalaria Pursh.; Rumex crispus L., R. hymenosepalus Torrey; Senecio douglasii DC.; Sidalcea malvaeflora Gray; Sisymbrium incisum Engelm.; Sphaeralcea (Malvastrum) exile (Gray) Jepson; Stenotopsis linearifolius (DC.) Rydb.; Stephanomeria exigua Nutt. var. pentachaeta Hall, S. virgata Benth.; Tropidocarpum gracile Hook.; Vaccaria vulgaris Host.

This list probably represents only small fraction of indigenous plants available to Tübatulabal, of which they made no use; it serves to illustrate, in concrete fashion, selective processes at work, among people of hunting-gathering culture, in their utilization of their floral environment, and negative rôle which part of that environment played in their culture.

Plants put to other ethnobotanical uses, for curing, house building, etc., referred to in discussions of these subjects.

222 Gathering of plant food.- When acorns ripe,
[462] "all the people except very old persons and young children went together to get them" (SM); women chiefly collected them while men hunted, trapped.
● 251 Acorns gathered from ground in small conical baskets, transferred when baskets full to large basket, in which they were brought back to camp and spread out on deerskins, tule mats for 3-4 days to dry, this preventing acorns from sweating when cached; then stored at acorn grounds, in elevated caches. Acorns gathered near home packed back to hamlets, cached near houses.

222 When berries ripe on shrub (opo·bol), Rhamnus
824 californica cuspidata (Greene) Wolf, which grows in foothill floral area, "the people knew piñons were ready to be gathered in the mts. So some men went out first to see where the piñons were good; just any men went; they decided, and then everybody went to the places where these men said the
[887] nuts were plentiful" (SM). All inhabitants of hamlet or of several hamlets went together; sometimes very old persons might not stay at piñon camp when weather became too cold, but return to hamlet alone. Piñons gathered when cones reached maturity, but before they had opened; men, boys knocked cones off trees with staves or pulled down branches with "shepherd's crook" staff; men, women picked up cones, put them in conical lug baskets which were emptied into larger conical

824 pack baskets as in gathering acorns. At camp when
222 sufficient quantity of cones gathered, men, women prepared bed of sage (uyuga·dul), Artemisia tridentata Nutt. or A. cana Pursh., cones dumped on
824 this, brush fired. Cones tested from time to time to determine whether heat from burning brush had
222 caused scales to open sufficiently; if by time
●251 brush burned down cones not sufficiently open, more brush was piled on top of them, roasting continued. After cones fully opened, allowed to cool; nuts shaken, picked out by hand from charred cones or winnowed from dirt and spread out on hides laid on ground around camp to dry for 3-4 days, as for acorns. Cached in pits. Those piñons which fell to ground from cones which had opened on trees as season advanced gathered by hand, brought home unroasted. Roasted piñons often pierced with sharpened twig of mt. lilac (utugu·bi·l), Ceanothus cuneatus, foothill floral area, and strung on long lengths of native twine; lengths of strung piñons festooned over houses when owners returned to village, or made into baskets (p. 32) at piñon grounds. Later these strung piñons eaten as delicacies.

222 During May, green cones of Digger pine twisted
462 from branches, chiefly by men, boys; sliced down
252 sides with obsidian knife; nuts picked out of soft shells, eaten immediately. Later in fall when cones matured but scales still closed, cones gathered by men, boys, roasted and treated in same manner as piñon cones.

222 Small seeds such as chia, wild oats, Mentzelia seeds, juniper berries, gooseberries, manzanita, and boxthorn berries gathered with seed beaters as Steward describes (Steward, 1933, 239). Bunch grass and Polypogon gathered on stem, dried in sun; seeds of wild heliotrope taken out by hand,
[262 eaten raw on spot. Elderberries broken off on stalk, stalk shaken over basket into which ber-
264] ries fell. Tule, rush roots, mariposa lily bulbs dug in moist ground with digging stick; woman kneelt on both knees, dug to one side or other of her body. Sunflowers treated as Steward describes (Steward, 1933, 239). Center stalk of Spanish bayonet and mescal knocked down at base with stave before stalks budded; prickly buds of Opuntia speared with sharply pointed stick; buds of tree yucca knocked off limb with staves. Leaves, stalks, small plants cut with obsidian knife.

412 Digging stick (u·lu·ini·l) straight stick, 4-5 ft. long, unweighted; made from piece of dry oak sharpened to point on end by rubbing on rock. Straight long stick (ma·wišul), 10 ft. or longer, used for knocking piñons off trees; shepherd's crook staff (olodi·l) had handle 3 1/2 ft. long with 5-in. crook at end. Crook made by bending end of green stick over knee and tying it in bent position with bark rope; stick then left to dry in hot sun for 3 days before crooked end untied.

Preparation of plant foods and beverages.- Mortar and pestle or grinding slab and rub stone

252 heads of Polypogon held over fire to singe off
262 awns, head rubbed between hands to extract seeds and these pounded in pit mortars. All small seeds
[264 mixed with cold water and made into thick gray-
272] colored gruel (ha·yi·l) which was drunk for refreshment, "like lemonade"; women often gave children drink of this gruel between meals. Two varieties of chia might be used mixed together, but neither mixed with Mentzelia seeds. Although small seeds now regarded as something of delicacy, they are still occasionally gathered in large quantity, using aboriginal methods; in 1933 some Kawaiisu brought 10-lb. flour sack of chia seeds to SM's rancheria, offering them for sale.

243 Wheat now cut by hand, piled up on piece of
252 canvas and thrashed with 4-ft. pole; winnowed in
262 flat tray, parched in oven, pounded into flour in pit mortars, and flour mixed with water and little sugar to make stiff mush. Corn is eaten on cob in roasting ear stage or allowed to dry on cob; 2 cobs twisted against each other to remove kernels, which are parched, pounded, winnowed, and meal made into mush.

252 Juniper berries boiled fresh; when dry and
262 fully ripe seeded by hand, flesh pounded in pit mortars and eaten raw; pounded mass never dried into cakes or beverage made from berries. Flesh of juniper berries "sweet." Ripe boxthorn berries pounded in pit mortar, taken up in hands, mixed with small amount of water and made into "biscuits" which were dried in sun; no fat added. These small balls stored; when used broken up, soaked in water, eaten; tasted "just like grapes."
● [251] Elderberries boiled in clay pot with water and eaten (SM); FP said they "tasted queer." Never stored for winter.

Rush roots peeled, sun-dried, pounded into flour (obolinil) in mortar, mixed with water and stone boiled into mush.

252 Several plant foods roasted; for mescal short
264 trench dug, fire made in trench, tender young
262 stalks cut in half, laid on fire, covered with dirt and left overnight. In morning stalks uncovered, peeled, and eaten. Quantity of Spanish bayonet stalks laid directly on top of blazing brush fire; stalks turned once while cooking; when soft, stalks buried in dirt or sand, left to cool; burying made peel "slip off easier" (SM). Fleshy receptacles of Opuntia buds held over fire on end of sharp-pointed stick to singe off stickers (ukum), then spread on hot flat rock placed at bottom of pit, covered with another hot rock and pit filled with loose earth or hot ashes. Receptacles left to roast for about 8 hours; when taken out of pit outer skin peeled off and inner part eaten. Fleshy stalks wild rhubarb roasted overnight in hot ashes, eaten next morning.

252 Immature pods of tree yucca, while still in-
262 side green sheath, "boiled like cabbage" in clay pot (SM).

Several plant foods eaten raw by gatherer on spot; such included berries of deadly nightshade;

317 Salt.- Rock salt (uṭa·l) obtained in winter
135 chiefly, from dry salt lake to E in Koso terri-
431 tory between Randsburg and Cantil on n. edge of
Mohave desert. Individual men went for it, afoot;
[415] "a man started out at 2-3 o'clock in the morning,
taking water with him in a basketry water bottle.
He returned home the same evening or the next
487 day, bringing back 1/2 sackful of salt, enough
for about one month, on each trip" (SM). Route
followed led S from Weldon to Kelso valley in
Kawaiisu territory, thence SE to Jawbone canyon
and Mohave desert and NE to Dry Salt lake. An-
other route from Onyx led over Walker pass, S
across Indian Wells valley to Dove springs and
through Red Rock canyon to Cantil. Either route
[482] about 40 mi. long. Salt transported in large
lumps, in deerskin sacks; when used pounded in
mortars or pulverized on slab; used sparingly
on cooked meat and for drying meat and fish,
but not to season acorn, piñon mush, or any other
262 plant foods. Salt per se not specifically tabooed
784 at certain times (SM, FP), as among Diegueño,
Mohave (Kroeber, Handbook, 721, 747, 748, 750);
food taboos related specifically to meat (includ-
ing fish), grease, and cold water. However, as
it was only with meat and fish that salt was
used, practical result was that observers of
meat taboo also abstained from salt during taboo
periods.

251 Storage and preservation of food.- Acorns
343 stored in granary (la·lwašti·l) of Miwok type
(Kroeber, Handbook, 446, pl. 38) but lacking cen-
ter post and with framework consisting of 4 large
posts, 6 ft. high, set upright in ground 3 ft.
apart to form square. Bottom of granary cleared
ground by 2-4 in. Granary lined with sagebrush;
after acorns dumped in, layer of brush piled over
them and bark slabs put over brush to keep out
rain. Granaries built at acorn grounds used from
yr. to yr.; during winter man and wife made
trips to their granary and drew upon contents as
needed. Smaller granaries of same type sometimes
set up near dwelling house to use for acorns
gathered nearer home.

Piñon cache (pača·i·ništ) consisted of cir-
cular pit, about 5 ft. in diameter, 2 1/2 ft.
deep, dug with sticks in floors of natural rock
shelters near piñon grounds. Pits lined with flat
rocks (SM) or brush (FP); loose piñons dumped
into cavity, cache covered with large flat rocks
or grass and small stones. During winter men made
trips to caches, packing home piñons in skin
sacks.

Families generally had storage house near
family dwelling; this storage house as large and
made in same fashion as living house, save that
[415] it lacked fire pit and smoke hole and walls were
thatch and mud covered. In this house were kept
large wide-mouthed coiled baskets, some "as big
as washtubs" and trays used as receptacles for
stores of dried meat, fish, small seeds, piñons,
acorns, as well as articles of domestic or occa-

251
343 sional use such as pack baskets, baby cradles, fishing gear, sacks, etc.

251 Fresh meat dried in sun by being cut into thin strips, 6 x 12 in. or smaller, hung up, either salted or unsalted, on branches of tree or on line made from native twine strung between 2 trees; drying generally took from 6-7 days. Fish split, cleaned, salt rubbed over them; hung up on willow branches to dry in sun during summer months. Neither meat nor fish smoked or dried over fire; dried fish "would last a long time" (FP, SM). Wild grapes spread out in sun to dry "like raisins" then stored for winter use; box-thorn berries dried whole or in cakes; rush roots sun-dried, stored; small seeds stored, either parched or unparched, in skin sacks or baskets, in storage house.

221 Staples; yearly consumption of food.- As food
262 calendar shows (p. 11), during spring and summer seasons Tübatulabal had relatively varied vegetable diet, but by fall their plant foods decreased in variety and during winter they "just ate acorns, piñons, and meat of any sort they could get, and dried and fresh fish" (SM). Of 2 vegetable foods eaten during winter, acorns figured as staple; "more acorns were eaten than piñons; old-timers ate acorn mush with deermeat, like bread. We just get acorns now once in awhile, because now we have white flour" (SM). That piñons were, however, also important in Tübatulabal diet, is shown by amount stored during good piñon yrs. However, abundant crops occur at best only every second yr., whereas acorns, of which Tübatulabal had 6 varieties to draw upon, could be procured in one locality or another annually.

Regarding proportion of animal, vegetable food eaten, my meager data on subject indicate
[146] meats, including birds and fish, may have comprised 40 per cent of food consumed throughout yr., acorns, piñons (if crop good) 40 per cent, small seeds, stalks, raw foods, etc., 20 per cent. As to amount of food consumed by family throughout year, data lacking for flesh foods, but for acorns SM said family 2 adults, 3 children needed one acorn granary (of dimensions given above), full, to have sufficient acorns for year. "If they had a larger family, they made a bigger granary" (SM). To this amount of acorns should be added contents of smaller acorn granary family might have near home. Piñon supplies varied, but in yrs. of good crop family of 5 stored cache such as described above, full of piñons, besides bringing several sackfuls home at end of piñon-gathering period.

251 Since all foodstuffs in order to be kept prop-
262 erly had to be sun-dried before being stored, weather which prevailed at season when wild foodstuffs were available for gathering and storing often regulated to a degree amount of food stored from yr. to yr. This consideration applies especially to storage of fish and some of minor plant foodstuffs, such as salt from salt grass,

●251 sweets made from cane, wild grapes, etc. Acorns
262 and piñons on other hand required shorter drying periods than any of above-mentioned foods, and furthermore, after gathering them, drying could be postponed for few days, if necessary, without danger of their spoiling.

312 Control of water.- Tübatulabal controlled water to degree of making ponds (pacu'a·t) near sweat houses; these ponds large enough for person to jump into after taking sweat bath. Ponds dug out with stick (nahat, also used for cane); water run into them from near-by spring. Springs also dug out to obtain drinking water, but no boxing in of sides, as is done now (SM).

312 Patches of wild seeds never irrigated as among
177 neighboring Owens Valley Paiute (Steward, 1933, 247). An irrigation ditch, course of which is still traceable, formerly brought water from Canebrake canyon to former Indian settlement at mouth of Chimney canyon in arid e. end of South Fork valley. This ditch constructed by Koso Indian refugees who settled in Tübatulabal territory at this spot ca. 1863. At time of its construction white settlers had been ranching in South Fork valley nearly 20 years and ditch seems obviously native borrowing of white culture item.

231 Domesticated and captive animals.- Regarding
[262] possession of dogs (pungul, pet; pukubišt, specifically dog), and their use as food, PN, oldest informant, stated Tübatulabal had dogs and roasted them to eat, as Yokuts did (Kroeber, Handbook, 526), before whites entered region. She described native dogs as "small, white, short-haired"; denied they were procured from Mexicans or other outside sources.

231 SM, however, said Tübatulabal did not possess
262 dogs until whites brought them in. His statements
177 at different times on use of dog for food contradictory; once he said Tübatulabal roasted and ate dogs after latter introduced, but subsequently stated dogs never eaten. He knew of use of dogs by Yokuts, stating: "The Bakersfield Indians always had dogs and ate them; they'd buy dogs from each other for (the equivalent of) $2 apiece." FP said Tübatulabal "had dogs pretty early, but got them from whites; after they got dogs they did not eat them." These statements reconcilable because they probably reflect cultural divergency between Palagewan and Tübatulabal bands; Palagewan, situated nearest Yokuts, in all likelihood most affected by Yokuts customs. PN's mother member of Palagewan group; PN's second husband a Yokuts; in discussing dog PN probably had Palagewan in mind, although this point not specifically stated at time. Reason for SM's confused statements may also have been this cultural divergency, but in statement of FP, whose affiliations lay with Tübatulabal and Koso to E, we have clear-cut denial of trait.

000 Cave, now closed, on Jesus Miranda's ranch

3: Voegelin E-5 (1931-1933) 1935
NS22 Tübatulabal NS22

857
152. Then that one, that one who hides it, is shooting next. 153. Then he is shooting that 539x
target. 154. Then they are paying him one arrow. 155. Then some are going back to their 159
own houses without their own arrows, when losing. 526

156. Then from there again we are playing another game—red clay. 157. We are making 539x
dolls, we are building everything, coyotes and also bears, wolves, and also people; we are
doing everything all the time. 158. When making that red clay into dolls, we then put that 159
already made doll in the heat. 159. Then from there when drying, it is getting hard. 160. It 524
lasts a long time. 857

161. Then from there we are playing another game again, the hide game. 162. Then we 539x
are putting one boy (to be "it"). 163. We are tying his eyes with a rag. 164. Then he is 159
seeing nothing. 165. Then from there, having finished tying him, we are all hiding. 166. 526
Then he is looking for us. 167. "Where are you?" he is saying. 168. "This way," we are 857
saying. 169. Then he is coming running. 170. Then some are coming in his tracks. 171. Then
he takes a jump backward. 172. Then he is grabbing one (boy). 173. Then that one does
the same next.

174. Then we never play again. 175. Then we used to hunt deer all the time, it being 539x
summer. 176. Then, also, we are going camping. 177. From there we used to hunt deer. 159
178. And also from there we are going fishing in the north fork. 179. We are catching many 224
fish, trout, and also bullheads. 180. Then we are making "jerky"; we are drying (the fish). [251]
181. Then, also, from there again, we are going fishing the next day. 182. Then also we are 226
again making those (fish) into "jerky." 183. And also we are again hunting deer. 184. We
are hunting every day. 185. Then after staying there five days, we are coming back from
there, we are coming toward our own home. 186. Then also, upon arriving, we are working [464]
again when we find those jobs (on the ranches of white men).

187. Then also, from there again, in another summer, we are going to gather pine nuts. 539x
188. We are all going and gathering, my mother, too (she did not go on the previous hunt- 159
ing and fishing trip)—we all, and also again many different people not our relatives (but) 222
different people. 189. (There are) many people. 190. Then they fix blackened pine nuts in 857
the evening. 191. Then we used to kill deer. 192. Then we are staying there all summer
gathering pine nuts. 193. We are gathering one sack every day. 194. And also we are roasting
the raw ones; we are gathering (them) when they fall down. 195. We used to gather (them)
every day. 196. From there we are coming back, the pine nuts being already exhausted.
197. Then we are packing the pine nuts. 198. All the many pine nuts were packed by us,
perhaps twenty sacks. 199. Then when all are coming back toward their own homes, we
are packing (the pine nuts). 200. It being winter, we used to eat that, blackened pine nuts, [262]
and also rabbit with acorn gravy, and also everything (else), deer, fish, everything, we
used to eat. 201. (There are) many acorns; we used to gather those too. 202. It being
autumn already when they are falling, we are going and gathering the acorns. 203. Then
already many are falling. 204. Then we are shelling those acorns. 205. Then our mother is [252]
drying (them). 206. Then when they are drying, she is going to pound (them) in the pit
mortar. 207. Then, having finished pounding that, she is leaching it in the leaching place
(a hole in sand on the edge of a stream). 208. Then, when going to leach it, she is irrigat-
ing it until noon. 209. Then from there she is gathering that up. 210. Then she is stirring
that in the clay pot. 211. Then she is bringing that toward the house. 212. We are eating
that for some time without bread. 213. We are eating acorn gravy nearly all winter.

214. Then from there my father made a fiesta. 215. First he called the Yokuts. 216. "I 539x
shall make a fiesta," he is saying, "and all of you come in future," he is saying, "on that 159
day," he is saying; "then we will enter upon it together when I make (fiesta)," he is 527
saying; "pretty soon in five days we will make fiesta," he is saying. 217. Then from there [235]
they all arrived there on the day. 218. They all entered upon it together. 219. Then the 624
clown is saying "Pretty soon we shall gamble," he is saying, "and also the hand-game
(will be played)," he is saying. 220. "Good," the people are saying. 221. Then they
gambled that night. 222. For two or three nights they gambled. 223. Then the clown